

**REMARKS**

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Applicants thank the Examiner for acknowledging Applicants' claim to foreign priority.

Claims 1-36 were pending. By way of the present Reply, claims 1 and 11-12 are currently amended and claim 3 is cancelled. Claim 1 has been amended to include subject matter included in claim 3. Claims 11-12 are not amended for reasons relating to patentability. Claims 1-2 and 4-36 are now pending. Claims 13-36 remain withdrawn from consideration.

**Claim Objection**

Claim 3 is objected to for containing an informality. Claim 3 has been cancelled. The objection of claim 3 is therefore moot. Claim 1, however, has been amended to include subject matter included in claim 3. Claim 1 does not need to be amended from "adsorbed" to "absorbed."

As is apparent from at least paragraph 0022 of the specification and Figure 8, Figure 8 shows a relationship between the moisture concentration contained in argon gas atmosphere at atmospheric pressure and the moisture amount adsorbed on the inner wall of a vessel. When the moisture concentration is 100 ppm or less, the adsorbed moisture amount becomes approximately  $1 \times 10^{16}$  molecules/cm<sup>2</sup>. In other words, the moisture amount adsorbed on the glass tube wall is set to  $1 \times 10^{16}$  molecules/cm<sup>2</sup> or less. Otherwise, the moisture concentration in the vacuum tube resultantly increases due to desorption, thereby reducing the electrode lifetime. Accordingly, it is understood that the subject matter of claim 3, now included in claim 1, is directed to the moisture amount which is adsorbed on the inner wall of the vessel and which should be reduced to  $1 \times 10^{16}$  cm<sup>2</sup> or less in order to extend the electrode lifetime. In other words, a relationship between the moisture amount adsorbed on the inner wall of the vessel and the lifetime of the electrode is disclosed.

Favorable consideration and withdrawal of the claim objection is respectfully requested.

35 U.S.C. § 102(b) Rejection – Tamura and Katase

Claims 1-2 and 4-12 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Published Application No. 2005/0093455 (“Tamura”). Claim 3 is rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,362,565 (“Katase”). Claim 3 has been cancelled. The rejection of claim 3 is therefore moot. Claim 1 has been amended to include subject matter included in claim 3.

A claim is only anticipated if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. (*Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See generally M.P.E.P. § 2131). Tamura and Katase fail to satisfy the requirements of 35 U.S.C. § 102.

Specifically, neither Tamura nor Katase disclose, teach, or suggest wherein, “the number of water molecules adsorbed on an inner wall of said reduced-pressure vessel is not greater than  $1 \times 10^{16}$  molecules/cm<sup>2</sup>,” as recited in claim 1.

*Tamura*

Tamura discloses a vacuum tube which may be a metal halide lamp 1 and which includes a discharge container 2 having a discharge space 2a, a pair of sealing sections 2b, and a pair of electrodes 3 arranged to face each other. (Tamura, paras. 0057-0058). The lamp 1 also includes a light-emitting material 6. (Tamura, para. 0057). The light-emitting material 6 is sealed in the discharge container 2 and includes metal halides. (Tamura, paras. 0058 and 0060-0061). The amount of water contained in the metal halides constituting the light-emitting material is controlled at 50 ppm or less when measured under the extinguished state of the metal halide lamp 1. (Tamura, para. 0061). A vacuum heat treatment may be applied to the discharge container 2 to decrease the water content including the OH groups attached to a glass surface. (Tamura, para. 0019). Tamura, however, fails to disclose, teach, or suggest wherein, “the number of water molecules adsorbed on an inner wall of said reduced-pressure vessel is not greater than  $1 \times 10^{16}$  molecules/cm<sup>2</sup>,” as recited in claim 1.

*Katase*

Katase discloses an electrodeless discharge lamp which prevents devitrification due to the use of a metal halide. (Katase, abstract). The discharge lamp 1 includes an arc tube 2. (Katase, col. 4, lines 50-57).

The Examiner relies on Katase to disclose a vacuum tube characterized in that the number of water molecules adsorbed in an inner wall of said reduced-pressure vessel is not greater than  $1 \times 10^{16}$  molecules/cm<sup>2</sup>. (Office Action, pg. 3). Katase, however, discloses that arc tube 2 is made of anhydrous quartz glass (GE214A, less than 1 ppm of water content) with 30 mm of inside diameter. (Katase, col. 5, lines 47-58). Thus, Katase considers water content included in the arc tube itself, but fails to disclose, teach, or suggest water content adsorbed on an inner wall. Accordingly, Katase fails to disclose, teach, or suggest, wherein, “the number of water molecules adsorbed on an inner wall of said reduced-pressure vessel is not greater than  $1 \times 10^{16}$  molecules/cm<sup>2</sup>,” as recited in claim 1.

\* \* \*

For at least the aforementioned reasons, neither Tamura nor Katase disclose all of the elements of claim 1. Additionally, for at least the aforementioned reasons, even if Katase and Tamura are combined, Tamura and Katase would not disclose all of the elements of claim 1. Claims 2 and 4-12 depend from claim 1 and are therefore allowable for at least the aforementioned reasons, in addition to their respective limitations. Favorable consideration and withdrawal of the 35 U.S.C. § 102 rejection is respectfully requested.

### Conclusion

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.


The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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By 

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